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REMARKS

Claims 1, 3-17 remain pending in the present application. By the present amendment, claims 1, 3-6, and 11 have been amended, and claim 2 was canceled during the PCT international phase under Article 34 PCT on November 20, 2000 as shown in the International Examination Report.

Formal Matter

Applicants respectfully remind the Examiner that claims 15-17 were also previously added to the application during the PCT international phase under Article 34 PCT on November 20, 2000 as shown in the International Examination Report. The support for these claims can be found on pages 4 and 5 of the specification. The above claim set includes claims 15-17 as amended.

Disclosure Objection

The Examiner objected to the disclosure because of the following informalities: Applicants used "sulphuric", "carbonized", and "neighbouring" throughout the specification. The Examiner requested the Applicants amend the specification to include "sulfuric", "carbonized", and "neighboring". Accordingly, Applicants have amended the specification to correct the informalities and have attached a clean copy of the specification. Thus applicants respectfully request the objection to the disclosure be withdrawn.

Claim Objection

The Examiner objected to claims 1, 7-10, and 12-14 because of the following informalities:

Claim 1, line 6, change "carbonised" to -carbonized-.

Claim 7, line 1, change "sulphuric" to -sulfuric-.

Claim 8, line 1, change "carbonised" to -carbonized-.

Claim 9, line 2, change "carbonised" to -carbonized-.

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Claim 10, line 1, change "neighbouring" to -neighboring-.

Claim 11, line 3, change "carbonised" to -carbonized-.

Claim 12, line 1, change "sulphuric" to -sulfuric-.

Claim 13, line 1, change "carbonised" to -carbonized-.

Claim 14, line 2, change "carbonized" to -carbonized".

Applicants have made the appropriate corrections and thus respectfully request the Applicants respectfully request the objection be withdrawn and submit that claims 1, 7-10, and 12-14 are in condition for allowance.

Rejection of Claims Under 35 USC 112

The Examiner rejected claims 3-6, and 10 under 35 USC 112, second paragraph, as being indefinite. The Examiner stated that claims 3-6 depend from a canceled claim. Applicants respectfully submit that claims 3-6 were previously amended to depend from claim 1 when claim 2 was canceled during the PCT international phase under Article 34 PCT on November 20, 2000 as shown in the International Examination Report. The above claim set includes claims 3-6 as amended. Thus, Applicants respectfully request this rejection be removed and the claims allowed.

The Examiner stated that claim 10, lines 1-2, the limitation, "a single separator separates neighbouring cells" is confusing. The Examiner suggested to Applicants to change this limitation to -a single separator separates the at least one capacitive cell with another cell-. Applicants appreciate the Examiner's suggestion and have amended claim 10, lines 1-2, to recite -a single separator separates the at least one capacitive cell with another cell-- as suggested by the Examiner. Applicants respectfully request the rejection be withdrawn and submit that claim 10 is in condition for allowance.

Rejection of Claims Under 35 USC 102

The Examiner rejected claims 1, 7, 11-12 under 35 USC 102(b) as being anticipated by Yoshida et al. (US 5,381,303). Applicants respectfully request reconsideration of the rejection based upon the amended claims for the reasons set forth below.

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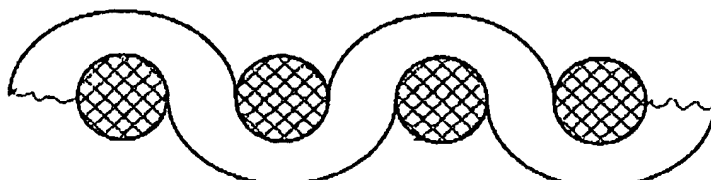
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The Examiner has indicated that Yoshida et al disclose in Figure 1 and 2 a high capacitance energy storage device comprising the elements recited in claim 1. He has indicated correspondence between the claimed elements and elements shown in Yoshida et al.'s Figure 2. The Examiner indicated that the separators of Applicants' claim 1 are considered to correspond to Yoshida et al.'s 7a which is one of the metal-spray layers 7a, 7b. These metal-spray layers 7a, 7b of Yoshida et al. are different from the separators recited in Applicants' claim 1.

The separators of Applicants' claim 1 are conductive and chemically inert as they come in contact with the electrolyte, as described on page 7, lines 25-33. By contrast, Yoshida et al.'s "metal-spray layers 7a, 7b" are in direct contact with electrolyte-saturated electrodes, i.e. they are in direct contact with electrolyte, as shown in Figure 2. Thus, these layers 7a, 7b are different from the separators as recited in Applicants' claim 1. Thus, Applicants respectfully submit that Figure 2 of Yoshida et al. does not anticipate claim 1.

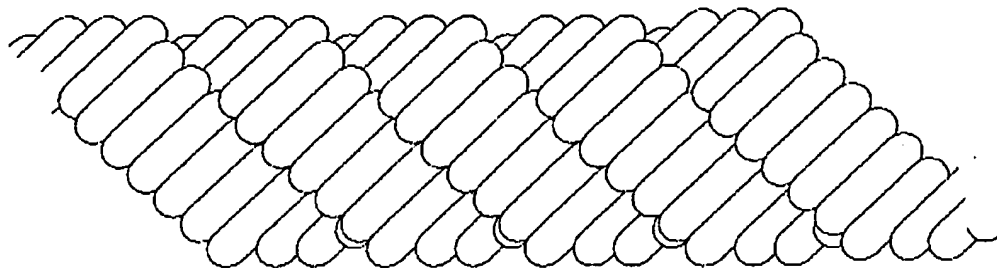
Moreover, neither the capacitor of Yoshida et al.'s Figure 1 nor that of Figure 2 show electrodes formed of a regularly structured carbonized and activated woven fabric, as recited in amended claim 1. The capacitor of Figure 1 of Yoshida et al. uses "an activated charcoal powder" (column 1, line 24). It does not use any woven fabric with a regular structure as recited in amended claim 1. The capacitor of Figure 2 of Yoshida et al. uses electrodes 5a, 5b "each made of an electrolyte-saturated web of fibrous activated charcoal". This is different from the carbonized and activated woven fiber with a regular structure as claimed in amended claim 1.

As recited in amended claim 1, the present invention provides a high capacitance energy storage device which has electrodes formed of a regularly structured carbonized and activated woven fabric, i.e., the woven fabric with a regular structure (page 4, lines 13-16). This means that a regular structure of threads in macro-state, like "cloth" or "serge", etc. The following shows a cross-section of the simplest example of "cloth" woven:



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Typically, woven fabric has threads, each made of fibers that are caught one on another by "fluffy-roughness" and then twisted. The following drawing shows an example of a twice-twisted thread.



As it is seen above, the state of threads is like a pre-stressed and has some strength and elasticity features (definite and predictable) to which the solid size (by shape) limit for non-destructive deformation corresponds. The woven fabric with a regular structure is different from web of fibrous activated charcoal as shown in Figure 2 of Yoshida et al., or those chaotic situating of plurality of fibers, such as in a non-woven fabric like felt or paper. Yoshida et al. do not teach use of any electrodes that are formed of a regularly structured carbonized and activated woven fabric. The Examiner has indicated that Yoshida et al. disclose a woven fabric as a base of fibrous activated carbon (column 1, lines 45-60).

However, it does not appear that this section directly refers to Figure 2. Moreover, a woven fabric used as a base of fibrous activated carbon is different from a woven fabric which is carbonized and activated and having a regular structure. Therefore, Yoshida et al. do not anticipate the present application as claimed in amended claim 1. Similar arguments apply to amended claim 11. As claims 7 and 12 depend on claims 1 and 11, respectively, these claims are also not anticipated by Yoshida et al. Applicants respectfully request reconsideration of this rejection of claims 1, 7, and 11-12.

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Rejections of claims 8-9 and 13-14 under 35 USC 103

The Examiner has rejected claims 8-9 and 13-14 under 35 USC 103(a), stating that these claims are unpatentable over Yoshida. Applicants respectfully request reconsideration of the rejection based upon the amended claims for the reasons set forth below. Claims 8-9 and 13-14 depend on claims 1 and 11, respectively. As discussed above, Yoshida et al. do not teach or suggest any use of a woven fabric with a regular structure as claimed in amended claims 1 and 11. Thus, these claims are also patentably distinguished over Yoshida et al.

Moreover, claims 8 and 13 recite that the woven fabric is formed from hydrocellulose. The Examiner has stated that the hydrocellulose is a well-known material used in the electric double layer capacitor art. Applicants respectfully submit that hydrocellulose was not known as the material for high capacitance device at the time that the present invention was made. Applicants did not locate any prior art showing or suggesting the use of hydrocellulose in this art. There are known various types of basis sources for the woven materials: number of natural (cottons, wools, flax, viscose, etc.) and a great number of synthetic fibers and many natural/synthetic combinations. Hydrocellulose (viscose) was only one of those many possibilities. Applicants tested various materials and found that the hydrocellulose-based carbonized activated woven fabric is the best for electrodes in view of chemical stability, energy and power density output. Applicants respectfully submit that selecting a hydrocellulose material was not an obvious design choice.

With regard to claims 9 and 14, the provision of the plurality of layers, which form electrodes, is more than "mere duplication of the essential working parts". It also provides the ability to increase the volume and weight efficiency as it decreases macrovoids when the device is assembled with the plurality of layers. Applicants respectfully request reconsideration of this rejection of claims 8-9 and 13-14.

Rejections of claims 1, 3-7, 9-12 and 14 under 35 USC 103

The Examiner has rejected claims 1, 3-7, 9-12 and 14 under 35 USC 103(a), stating that these claims are unpatentable over Hart et al (US 3,652,902) in view of

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Yoshida et al. Applicants respectfully request reconsideration of the rejection based upon the amended claims for the reasons set forth below.

Applicants appreciate the Examiner's indication that Hart et al do not disclose that the electrodes are formed of a carbonized and activated woven fabric impregnated with an electrolyte. Yoshida et al. mention the possible use of a woven fabric in the background section in column 1. However, Yoshida et al. clearly teach away from the use of a woven fabric such that "However, the voids in the woven texture are a direct cause for a decreased capacity/volume ratio." (column 1, lines 56-58)

In the preferred embodiment section, Yoshida et al. indicate the possible use of a fibrous material in column 11, line 8-10. However, Yoshida et al. do not disclose this fibrous material is woven with a regular structure as recited by Applicants' amended claims. In view of the background section in which Yoshida et al. teach away from the use of a woven material, it is Applicants understanding that this fibrous material should be a non-woven fibrous material without any regular structure.

Furthermore, as discussed above, Yoshida et al. do not teach or suggest to use a woven fibre with a regular structure. Therefore, even if one skilled in the art combines with Hart et al. and Yoshida et al., one skilled in the art would avoid the use of woven fabric as per the teaching of Yoshida et al., and would fail to achieve a device as claimed in amended claims 1 and 11. Applicants respectfully submit that the invention as claimed in amended claim 1 and 11 has patentably distinguished over Hart et al. and Yoshida et al.

Claims 3-7, 9 and 10 all depend on claim 1, and claims 12 and 14 depend on claim 11. Therefore, Applicants respectfully submits that the invention as claimed in these claims have also been patentably distinguished over Hart et al and Yoshida et al. In conclusion, the invention as claimed provides a high capacitance energy storage device that comprises a housing, and at least one capacitive cell having electrodes formed of a regularly structured carbonized and activated woven fabric, and conductive, chemically inert separators. By using these elements, the device can be assembled using a formed fabric. This allows manufacture of a relatively large device under a pressure, which was

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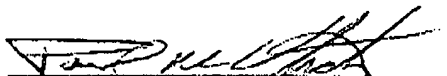
not possible for the capacitors disclosed in Yoshida et al. Applicants submit that the present application is now in condition for allowance.

CONCLUSION

Applicants respectfully submit that the present application is in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

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